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# Big Sky Clearwater

Published jointly by Montana Water Quality Bureau, Montana Water Pollution Control Association,
and Montana Section American Water Works Association

FALL 1992

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*Montana's water . . .*
*Use it like life depends on it.*

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If you have any ideas or information that you would like to pass along to other people involved in the water and wastewater field, please don't hesitate to contact the office of the Water Quality Bureau. This publication welcomes articles of interest and random pieces of information regarding anything to do with water.

An article may consist of your own thoughts and ideas about something you may have experienced. Perhaps such information could help someone else in their day-to-day work. It could also be a technical article that is developed from research information and library resource material. If it has to do with water and you think it may be of interest, give us a call at the WQB: 444-2406.

If you do not wish to continue receiving this publication please send us your name and address so that we can remove your name from our mailing list.

Water Quality Bureau
Department of Health & Environmental Sciences
Cogswell Building
Helena, MT 59620

Cover: *The Water Quality Bureau logo was selected by Bureau staff this year and illustrates our mission statement: "To protect, maintain and improve the quality of Montana waters." Logo design by Erich Weber.*

The Big Sky Clearwater is for water and wastewater operators across Montana. It is published two times a year by the Water Quality Bureau of the State Department of Health and Environmental Sciences in cooperation with the Montana Section of the American Water Works Association and the Montana Water Pollution Control Association.

*Publication dates*: February 1 and August 1. Last date to receive contributions is 30 days before publication.

## LOW WATER BAD FOR EVERYONE

Glenn Phillips
Montana Department of Fish, Wildlife and Parks

Montana is now entering into its seventh consecutive year of drought and the 1992 drought year is likely to be one of the most severe in Montana's history. Farmers and ranchers who depend on water for their crops, guides and outfitters who earn their living introducing clients to our renowned fisheries, everyday recreationists who enjoy floating and fishing, and municipalities that depend on water withdrawals to meet industrial and domestic needs are all feeling the crunch.

Waterfowl production has also suffered a severe setback because of the low water conditions. Islands and shoreline cover that normally provide security for nesting and rearing waterfowl are now easily accessible to predators. Many ponds, wetlands, and small lakes have dried up all together. As a result, Montana's 1992 duck breeding counts are expected to be among the lowest ever recorded. Fish that live in Montana rivers and streams are particularly affected during low water years. As stream flow drops, water temperature increases and dissolved oxygen concentrations are lowered. Riffle areas, the nursery grounds for producing insect life that fish feed on, are reduced in size resulting in a diminished food supply. Moreover, fish and other aquatic life are forced into a more confined living space, causing added stress and greater competition for the little food that is available. In severe instances, conditions deteriorate to the extent that fish are killed. In 1988, drought related fish kills occurred in the Jefferson River near Silver Star, Warm Springs Creek near Anaconda, Ten Mile Creek near Helena, Ruby River near Sheridan, Madison River below Ennis Lake, and the East and West Gallatin Rivers near Bozeman. Expectations for 1992 are even worse.

The following table illustrates streamflows in various Montana waters for the same dates during 1988 and 1992.

| Location | Date | Streamflow (cfs) 1988 | Streamflow (cfs) 1992 |
|---|---|---|---|
| Smith River (Ft. Logan) | May 20 | 73 | 22 |
| Clark Fork (Deer Lodge) | May 27 | 235 | 24 |
| Blackfoot River (Bonner) | May 27 | 3530 | 2450 |
| Gallatin River (Logan) | May 27 | 3490 | 1080 |
| Tongue River (Miles City) | May 26 | 1210 | 7 |
| Rock Creek (Clinton) | May 27 | 1600 | 529 |
| Jefferson River (Three Forks) | May 28 | 2570 | 1370 |
| North Fork Flathead (Columbia Falls) | May 26 | 8120 | 6650 |

Given that most significant spring and summer rainfall has historically occurred prior to June 20, the outlook for the remainder of the summer is not encouraging.

Although we differ in our uses of and dependence on water, we share a common responsibility to conserve water in every way possible. Water and wastewater treatment plant operators play a particularly important role in helping minimize the effects of drought. If your community withdraws water from an already dewatered stream, every effort should be made to conserve water. If your facility discharges treated water, fine tuning your treatment system to ensure maximum treatment efficiency will help preserve the quality of the water than remains in the stream.

By working together and recognizing that we all have legitimate needs for water, we can get through these unusual years and look forward to the wetter years that are inevitably ahead.

# WASTEWATER REUSE - The Water Crops Love to Drink!

Karen Bucklin Sanchez

Did you know that wastewater is being reused in Montana? Treated wastewater effluent contains nutrients and trace nutrients needed by plants. The most common use for reclaimed water is irrigation of crops. Other uses are irrigation of golf courses, parks, cemeteries, and landscapes such as those along freeways.

One of the important benefits of water reuse for irrigation is preservation of aquatic habitats. The irrigation water that would have been pumped from a river instead remains in the river. During drought periods, low water levels in rivers threaten fisheries. By using treated wastewater for irrigation, more water remains in the rivers. If treated wastewater effluent is used for irrigation, less water is taken out of a stream, allowing the stream water levels to remain more constant, benefitting the stream's health, and the health of the aquatic life - such as fish.

Are you interested in using treated wastewater for crop irrigation? Call for a copy of the Montana Department of Health and Environmental Sciences, Water Quality Bureau's "Spray Irrigation Guidelines" (444-2406). These guidelines will soon be updated. However, the basic requirements should remain the same as in the current guidelines. These guidelines are summarized below:

For spray irrigation of fodder, seed and fiber crops, the following requirements apply:

1) Reclaimed water shall have a level of quality no less than that of secondary effluent. Wastewater treated in a properly operated lagoon should meet the secondary requirements.
2) Disinfection of the reclaimed water is generally not required. However, the area to be irrigated must be fenced. A 200 foot buffer zone between the fence and the irrigated land is recommended.
3) If milk cows or goats are to be pastured on the area that has been irrigated with reclaimed water, there must be less that 23 coliforms per 100 milliliters present, or the water must be disinfected.

In addition, the following practices are encouraged; trees or shrubs cultivated as a screen around the spray field, and the use of low trajectory nozzles on spray irrigation equipment.

Reclaimed water used for irrigation of food crops, landscapes, golf courses, playgrounds, parks, etc., must be disinfected and/or public access must be limited.

To determine the application rates for the reused water, hydraulic and nitrogen loading rates are calculated. The hydraulic loading rate is the same as for irrigation using other water sources; it determines how much water can be applied to a crop, or, how many acres can be irrigated given the availability of a certain amount of water. The amount of water which can be applied to a crop depends on the annual rainfall and the water requirements of the crop to be grown.

Nitrogen loading rates are calculated to prevent over-application of nitrogen to a crop and to prevent the groundwater from being degraded. The crop's nitrogen requirements and the nitrogen concentration of the water are compared to determine how much water may be applied, so that the nitrogen is used by the crop, rather than allowing nitrogen to reach the groundwater. In Montana, this is usually the limiting factor, rather than the hydraulic loading rate.

Operational requirements for spray irrigation include provision of storage volume for the wastewater during the non-irrigation months, determining a maximum allowable wind velocity during which spray irrigation may be utilized, and groundwater monitoring to assure that there is no degradation of the groundwater quality. The Water Quality Bureau can provide guidance for groundwater monitoring. In general, three monitoring wells, one upstream and two downstream are required to be monitored quarterly.

If you are interested in learning more about water reuse, contact us here at the Montana Water Quality Bureau. We can put you in touch with communities who have been spray irrigating their wastewater effluent. We can also provide you with a copy of the "Spray Irrigation Guidelines". And lastly, remember that Montana law requires that any changes to a wastewater treatment system must be reviewed by the Department of Health and Environmental Sciences.

# MEET THE STATE WIDE WINNERS OF WATER AWARENESS MONTH CONTEST

*Water Awareness Month was sponsored by numerous agencies and individuals who are concerned with preserving the quality of Montana's water. One of the "main events" of Montana's first Water Awareness Month (January) was a statewide high school contest. **Ben Holt, of Helena High School** won the writing competition, and here is a reprint of his winning article.*

## OLD MAN RIVER

A partly cloudy day with the sun just starting to peek out from behind the clouds was what lay above me. I was resting in my canoe, drifting along the Missouri close to the headwaters. It was a perfect morning to be out lazily floating and fishing. After a while I noticed that the mountains seemed to fade away to a gray background. I cursed myself for not noticing it sooner. I was floating into a channel with fog starting to roll in around me. In a few moments I was surrounded by fog. It reminded me of a local description of the river, "too thick to drink; too thin to plow," the Big Muddy. Having lost all sense of direction and sight, I called out for help. Although my first several shouts were in vain, I was surprised to hear an answer to my next cries. "Over here," the voice repeated.

"Where?", I asked.

"To your left." I followed this verbal beacon to its source.

I was surprised to see an old grizzly man slowly materialize before me. He looked like the perfect picture of an old mountain man. He had short stubble of a beard starting to grow, his eyes had diagonal wrinkles that seemed to point to his ears, a result of having been too long in the sun. He had broad shoulders and a muscular back that showed that he had lived a life of labor, and although old, he still appeared strong.

He stood up from his seat in the grass beneath a medium-sized pine tree with a grace I found surprising in an old man. As I paddled toward him he stuck out his hand and yanked me out of the boat with his great strength.

"Thank you," I said. "I was badly lost in the fog."

"Many are lost in the fog," he replied in a dreamy state with a far away look in his eyes. He then shook his head as if to shake the dreaming out of his system. He then mumbled, "Got to get back." Looking up at me, he asked, "Would you like to come back to camp with me?"

"How long will the fog last?" I questioned.

He stated, "Quite awhile."

"Okay," I replied. "I'd love to go to your camp."

He turned on his heel and started to walk into the evergreen forest behind him with me walking right beside him. As we were walking, the old man asked me my name. "Ben," I said and asked, "what's yours?"

He replied, "Amahte Arz-Zha."

"An Indian Name?"

"Yes," he stated.

"You must know a lot about the river to able to find this small channel," I said.

"It's one of the last best places," he said with a glint of a tear in his eyes.

"I love this river and I'm worried about it," I replied.

He smiled at me and stated, "You know, Ben, you should be worried. Just look at what is happening. We have the state of Montana suing the Bureau of Reclamation at Fort Peck for letting the water get too low and damaging the fishery and the recreational capability of the Fort Peck Reservoir. We have mining interests who are telling us that they need to allow chemicals at a higher concentration than currently exist in the streams. City water systems, such as that in Butte, are crumbling, contaminating the water and wasting water through leaking pipes."

"Aren't these just isolated problems?" I asked. "Can't we just float a bond issue and fix them?"

"No, Ben, these problems will be with us into the twenty-first century. It will take more than money to solve these problems."

As Amahte and I strolled up to the camp, I noticed several pieces of old blackened cookware to my left neatly stacked on a wooden pine rack. To my right were three well-ordered tents. Straight ahead, sitting on a log near the smoldering fire, were three men. Amahte pointed to the first one on the left and then continued down the line as he said, "Let me introduce you to my best friends, Gallatin, Madison, and Jefferson."

"Just call me Tom," Jefferson said. As I sat down near Tom, Amahte went over to the cooking gear searching for something and making quite a racket.

"Got any milk for Ben?" he asked.

"No," replied Jefferson, "but we do have some spring mountain water over by the tents."

"Amahte sure knows a lot about the river," I said.

Jefferson replied with a smile, "He's been around for a while."

Amahte gave me a drink and sat down next to Gallatin. He commented, "I told Ben about our water problems and how they accumulated over the years. Maybe you can tell him how your dream impacted America, Tom."

Jefferson replied, "When America was young, we needed to grow. My dream was to open up the west to development and prosperity. History has been consistently bonded to water. When I sent Lewis and Clark out to map and explore, their entire trip was affected by the water they encountered. Lewis and Clark's journal had an immediate and lasting impact on Montana with its claims that the upper Missouri was richer in beaver and otter than any other county on Earth..."

Gallatin interrupted, "Another treasure that was found in the cold streams and rivers was the placer gold. The method of reclaiming the ore involved water and it is now a source of pollution that we are still fighting."

Jefferson continued, "Yes, and when people discovered the value of the furs and minerals, the best way to travel inroad and transport the goods was the waterways. As the settlers began to arrive, the timber industry began. Lumber was needed for the settlers' housing, miners' flumes, sluice boxes, and underground beams in the mines. The logs were transported by floating them from the mountains to the mills on the rivers and streams."

Madison interrupted, "As with mining, little thought was given to the future when they cut the hillsides. They didn't think about the rain and the snow and how these would erode the land, muddying the streams and affecting the wildlife and settlers."

Jefferson went on, "The coming of the railroad brought mining developers, corporate livestock production and statehood. The people no longer relied on surface water. They drilled wells and tapped the aquifers as more and more water was demanded for homes, livestock and irrigation. This irrigation created the need for damming the diverting rivers and streams. You know, in 1889 John Wesley Powel, the director of the United States Geological Survey, made the statement that by allowing no drop of water falling within the area of the state to flow beyond the boundaries of the state, we could irrigate one third of Montana."

I noticed that a short, stocky man with small spectacles carrying a leather bound book had emerged from one of the tents. Standing behind Jefferson, who had not noticed him, he interrupted saying, "Yes, and we can see today how this attitude created problems. Improper irrigation with too much water in the fields causes erosion, washes pesticides and fertilizers into the streams and ground water and causes some soil to become salty. Downstream states are concerned today with how much water they will receive and is rightfully theirs. In all truth, there is very little water left today for new irrigation projects in Montana."

I looked at the old man, Amahte, who smiled and said, "The Indians called him Four-Eyes." As I stood, the man extended his hand and said, "Hello, I'm Teddy Roosevelt."

Jefferson continued energetically, "Roosevelt, there is a positive side! The dams were built and they now store water for irrigation and control previous flooding problems. The droughts are lessened and hydro-electrical power is provided attracting industry and supplying Montanans with power. Methods of irrigation have changed over the years. sprinkler systems have replaced spread irrigation, using one third less water."

Roosevelt looked thoughtfully into the distance, then turned and with a serious tone to his voice said, "Ben, Thomas had good intentions and vision beyond his years in opening the west for the strengthening of this nation through industrialization, colonization, and development of its natural resources, but he didn't foresee what people of lesser vision than his would do with his dream. They did not consider the long term impact. The fur traders, miners, stockmen, industrialists, foresters, and cities have raped Montana's water resources. These same problems associated with our history of development will be with us in the year 2000."

"I created Yellowstone Park to protect a natural resource that exists no where else in the world. We need to balance environmentalism with industrialism. In the twenty-first century with the growth of the population and the need to develop Montana economically, we must use our water carefully. Water quality and distribution will be a major issue. In low water seasons, with the current growth patterns, we will not be able to supply the required water. Our current legal system is cumbersome. It will be difficult to relocate water use to fit the changing economical opportunities. The system now protects the "oldest claim for water."

Water quality is very important to our survival. For example, at Toston the arsenic content causes a risk of cancer in about one case per 666 people. Our polluting with fertilizers, pesticides and salts affect the meat we eat and the plants we grow. We cannot allow this pollutant concentration to grow. This will be hard since the amount of the water flow is expected to be lower; it will be more difficult to dilute these chemicals."

"We impact the soil by irrigation. If not done properly, we see erosion and reduced water holding ability. Agriculture will be affected."

"Fish habitat is under stress in some areas. Pollutants and changing water temperature due to lower water levels and higher chemical concentrations entering streams threaten fisheries and aquatic habitats."

"The changing of the water also affects wildlife. Large animals as well as water fowl depend on availability of water for survival. Lower water supplies also increase noxious weeds sometimes destroying site storage."

"Our water availability is also a high draw for tourists. Affecting our water could impact our 100 million dollar tourism industry."

"Hydro-electric power is an inexpensive way to develop power. If we reduce the flow through our dams, Montana will have to have another source of power."

"Cities continue to grow and with them sewage and water demands. Improper treatment of water will affect downstream users."

"Ben, technology will be there to solve these problems. The technicians will understand how to solve the problems. The problem in the year 2000 will be the ability to resolve these problems through the political system."

Suddenly Amahte stood up. "The fog is starting to lift. You should be starting back." I stood and shook the hands of these great men and said good-by. Amahte and I started toward my canoe. I turned to Amahte and said, "You know, this seems to be a bigger problem than I first thought."

"The problems today and in the year 2000 are the same: quality and quantity. The only difference is that in the year 2000 the demand will be bigger. You and the coming generations must realize that the demand for our water resources will be so great that there will be a loss of freedom that every person, industry, and user must accept and deal with to meet the demand. How we use our natural resources will be the most critical problem we face. Water if life. Our industrialists and our environmentalists must be made to realize that concern for the quality of life is the common ground for the tough compromises that must be made. Our congress is a reactive body. It is not necessarily the government who will be able to work this compromise. We may not be able to wait around for the government to solve the problem. We must begin to nurture this solution on our own. Our problems can become opportunities when the right people come together."

"I get it!" I tell him. "I have two responsibilities. First I must accept my personal responsibility to conserve and protect the water that I use, and second, I must provide the leadership to take the technical solution and create the political ability to solve the problem, even at the loss of some of by personal freedom. Our resource is limited and must be protected while allowing for expansion. A tough tightrope to walk!"

The old man answered, "You cannot steal from the future generation."

"We walk the rest of the way to my canoe in solence. I thank him for his hospitality and the great inspiration he has provided me with that morning. The words of Madison, Gallatin, Jefferson and Roosevelt still linger in my mind. As I begin to push my canoe in the water, I stop and turn once more to Amahte. "I almost forgot to ask. Your Indian name, what does it mean?"

"The Missouri."

*-Ben Holt, Helena High*

# 1992 MSAWWA/MWPCA JOINT CONFERENCE

*A perky crowd at opening session*

*AWWA membership recruitment awards & winners:*
*Charlie Dickert - Color TV*
*Mike Patterson - Boom Box*
*Jim Kaercher - 35mm Camera*

*Recruit this year and win a chance at next year's prizes*

*Vendors display new technologies and equipment*

*Guess how much Howard Peavy enjoyed the show?*

*Social hour, right Marc?*

*Zoo Montana residents entertained at Friday's luncheon*

*Dan, "Mr. Smooth" Fraser cuddles up to the entertainment*

# MSAWWA/MWPCA DONALD G. WILLEMS SCHOLARSHIP

The 1992 MSAWWA/MWPCA Donald G. Willems Scholarship was awarded to Rhonda Knudsen of Montana State University. Rhonda is a third year student in the civil engineering program. Rhonda considers herself as a non-traditional student. She is married and the mother of two boys. She and her husband operate a ranch in eastern Montana. While trying to maintain a family life, help with the ranch and attend college, Rhonda also works part-time for the Soil Conservation Service.

*From left to right: Howard Peavy, Rhonda Knudsen, David Gibson (Dean College of Engineers), Bill Larsen (coordinator of Bio Resources Engineering and Rhonda's faculty advisor).*

The $500.00 scholarship was awarded from a trust that was established by MSAWWA/MWPCA to honor Donald G. Willems. Each year the associations are offering one or more scholarships to students that are pursuing a career in the water and/or wastewater field(s). For more information, contact Joe Steiner, City of Billings - Public Utilities Department, at (406) 657-8352.

# Membership Application

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**Water Pollution Control Federation**

601 Wythe Street
Alexandria, Virginia 22314-1994

**Association**

Montana Water Pollution Control Association

Use this application to join the Water Pollution Control Federation and your local Member Association. Simply complete this application and return it to the address below. Along with your monthly publications, you are also entitled to group insurance, technical assistance, discount on technical publications, and much more!

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Please print.

First Name, Middle Initial (11) Last Name (16) (Jr., Sr., etc.) (3)

**Mailing address** ☐ Business or ☐ Home

Business Name (If applicable) (30)

Street or P.O. Box (30)

City (20) State (2) Zip Code - (9)

Area Code—Telephone - - (10) Country (If Outside U.S.) (16)

**WPCF Sponsor** (Not Required) (28) Sponsor's Member I.D. Number (6)

**Employer Code** (2)

- 11 – Local/Regional Government/Agency
- 13 – State/Interstate Government/Agency
- 16 – Federal Government/Agency
- 21 – Consulting Firm (Engineering/Other)
- 25 – Wastewater Equipment/Material/Supplier
- 27 – Industry
- 28 – Construction Contractor
- 31 – Educational Institution
- 61 – Other (Please specify): ____________

**Education Code** (1)

- 1 – Less than High School
- 2 – Training Courses, Short School
- 3 – High School
- 4 – Attended College
- 5 – Completed Junior College
- 6 – Bachelor's Degree
- 7 – Advanced Degree

**Membership Categories**

| ☐ **Active** | | ☐ **Operations Division** | | ☐ **Student** | | ☐ **Corporate** | |
|---|---|---|---|---|---|---|---|
| For individuals involved or interested in the advancement of knowledge pertaining to water quality. | | For individuals working on a day-to-day basis (or retired from) in a wastewater collection, treatment, or laboratory facility. | | For individuals enrolled at least half-time in a college or university. | | For companies engaged in the design, construction, operation or management of water quality systems. | |
| Dues | $ 70.00 | Dues | $ 40.00 | Dues | $ 19.50 | Dues | $ 180.00 |
| *Journal* | Included | *Journal* | ☐ $30.00 | *Journal* | Included | *Journal* | Included |
| *Highlights* | Included | *Highlights* | ☐ $15.00 | *Highlights* | Included | *Highlights* | Included |
| *Forum* | ☐ $12.50 | *Forum* | Included | *Forum* | ☐ $12.50 | *Forum* | Included |
| TOTAL | $ ______ | TOTAL | $ ______ | TOTAL | $ ______ | TOTAL | $ ______ |

**Method of Payment**

☐ Check Enclosed—Make check payable to WPCF.

☐ Charge my ☐ VISA ☐ MasterCard ☐

Account Number ____________ Exp. Date ______

Signature ____________ ( ) Daytime Phone No. ______

Send Completed Application and Payment to:

**WPCF, Member Records**
601 Wythe Street
Alexandria, Virginia 22314-1994

*For more information, call (703) 684-2452*

Postal Requirement: Dues allocated for publications when included in membership: *JWPCF* — $15; *Highlights* — $3; *Operations Forum* — $5.

# AMERICAN WATER WORKS ASSOCIATION
# INDIVIDUAL MEMBERSHIP APPLICATION

Complete this form and mail to:
AWWA / 6666 W. Quincy Avenue / Denver, CO 80235
(303) 794-7711 • FAX (303) 794-7310

AWWA USE ONLY

PLEASE PRINT OR TYPE

Last Name ______ First Name (and middle initial) ______

Mailing Address ______

City ______ State Province ______ ZIP Postal Code ______

Area Code ______ – Telephone ______ – ______ Area Code ______ – FAX ______ – ______

Title ______

Employer's Name (If not already in mailing address) ______

Applicant's Signature ______ Date ______

Signature of AWWA Member Endorsing Application (Optional) ______ Endorsing Member Number ______

**ANNUAL DUES:**

| | | |
|---|---|---|
| **$65 / Active**<br>Grade Code 02 | **$30 / Affiliate**<br>Grade Code 06<br>(For operator level personnel or employees of small utilities) | **$22 / Student**<br>Grade Code 14<br>(Must be enrolled and carrying at least 10 credit hours) |

**ANNUAL DUES** $ ______

New England Assessment* ______

Multi-Section Option (other than own) ______

**TOTAL DUE** $ ______

If you have been a member of AWWA before, indicate dates here: ______

Make check payable to AWWA (Canadian funds add 20%).

☐ MasterCard ☐ VISA ☐ Diner's Club
☐ American Express ☐ Send Invoice

Card Number ______

Expiration Date ______

**PREPAYMENT OF ONE YEAR'S DUES REQUIRED**
No action can be taken on this application until payment is received.

*Applicants with an address in the New England Water Works Association a Section of AWWA (ME, NH, RI, VT, MA) must add $32.00 for Active Membership, or $15.00 for Affiliate Membership in their annual dues.

Address shown above is:
Check One: ☐ Home ☐ Office

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## MULTI-SECTION MEMBERSHIP

At this time you may also select a year's membership in other AWWA sections by circling your choices and include $12 for each section circled. Enter this total on the line reading "multi-section."

CIRCLE SECTION CHOICES

| | | | | | |
|---|---|---|---|---|---|
| AKA | ALASKA | IWA | IOWA | PAC | PACIFIC NORTHWEST (OR, WA, PART OF ID) |
| ALA | ALABAMA-MISSISSIPPI | KAN | KANSAS | | |
| ARI | ARIZONA | KNT | KENTUCKY-TENNESSEE | PEN | PENNSYLVANIA |
| ATC | ATLANTIC-CANADA (NB, NF, NS, PEI) | MEX | MEXICO | PRT | PUERTO RICO |
| | | MIC | MICHIGAN | OUE | QUEBEC |
| BRC | BRITISH COLUMBIA (BC, YT) | MOU | MISSOURI | RMT | ROCKY MOUNTAIN (CO, NM, WY) |
| | | MTN | MONTANA | | |
| CAL | CALIFORNIA-NEVADA | NEB | NEBRASKA | SCR | SOUTH CAROLINA |
| CHS | CHESAPEAKE (DE, DC, MD) | *NEW | NEW ENGLAND (ME, NH, RI, VT, MA) | SDK | SOUTH DAKOTA |
| | | | | SOW | SOUTHWEST (AR, LA, OK) |
| CON | CONNECTICUT | NEJ | NEW JERSEY | | |
| FLA | FLORIDA | NEY | NEW YORK | TEX | TEXAS |
| GEO | GEORGIA | NOC | NORTH CAROLINA | VIR | VIRGINIA |
| HWI | HAWAII (GUAM) | NOL | NORTH CENTRAL (MN, ND) | WEC | WESTERN CANADA (AB, MB, NT, SK) |
| ILL | ILLINOIS | | | | |
| IND | INDIANA | OHO | OHIO | WEV | WEST VIRGINIA |
| INT | INTERMOUNTAIN (UT, PART OF ID) | ONT | ONTARIO | WIS | WISCONSIN |

*IF "NEW" ENGLAND IS A CHOICE, add $44.00.
This includes their assessment and multi-section fee.

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**ALL APPLICANTS SHOULD COMPLETE THIS SECTION:**
Circle the descriptions below that best describe you. The information is used in audits of AWWA readership.
Circle only ONE in each group.

**BUSINESS AND INDUSTRY**

A. Public Water Supply Utility--Municipally Owned
B. Public Water Supply Utility–Investor Owned
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D. Consultant
E. Contractor
F. Private Industrial Systems or Water Wholesaler
G. Manufacturer of Equipment & Supplies including Representatives
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I. Educational Institutions, Faculty and Students, Libraries, and Other Related Organizations
J. Fully Retired
K. Research Lab
L. Unreported

**JOB TITLE**

A. Executive-Gen'l Mgr., Commissioner, Board Member, City Mgr., Mayor, President, Vice-President, Owner, Partner, Director, etc.
B. Management-Division Head, Section Head, Mgr., Chief Engineer, Comptroller, etc.
C. Engineering/non-managerial-Civil Engr., Mech. Engr., Envir. Engr., Planning Mgr., Field Engr., System Designer, etc.
D. Scientific/non-managerial-Chemist, Biologist, Biophysicist, Researcher, Analyst, etc.
E. Purchasing-Purchasing Agent, Procurement Specialist, Buyer, etc.
F. Operations-Foreman, Operator, Maintenance, Crewman, Service Rep., etc.
G. Marketing & Sales/non-managerial-Mkt. Analyst, Mkt. Rep., Salesman, Sales Rep., etc.
H. Other (describe) ______

**CHECK FIELD(S) SERVED:**

5 ☐ Water Supply Only
7 ☐ Wastewater Only
9 ☐ Both
3 ☐ Other

In some AWWA sections, a portion of the section allotment equal to 50 percent or more of the domestic subscription rate charged for the section periodical will be allocated toward a subscription of that periodical.

Dues allocated for each publication members receive:
*Journal* $28
*MainStream* $6
*Opflow* $5
*Waterworld News* $5

# MSAWWA/MWPCA JOINT COMMITTEES - 1992/1993

These committees were formed to perform the planned activities for the two associations in the upcoming year. Some changes were made from previous years to make the committee work more efficient and meaningful. The work of the committees is critical to the success of organizations. Please feel free to contact any of the committee chairs if you are interested in the activities of that group and would like to participate.

| | | |
|---|---|---|
| Safety and Heroism | Mr. Bill Bahr, Chair | 761-7004 |
| Host City Committee | Mr. Dave Schultz, Co-Chair | 782-2311 |
| Program | Mr. Terry Johnson, Co-Chair | 322-5335 |
| | Mr. Mike Rubich, Co-Chair | 723-8213 |
| Sections Directory | Mr. Leonard Willett, Co-Chair | 449-2536 |
| | Mr. Mike Garrity, Co-Chair | 447-8455 |
| Historical | Mr. Tim Berry, Chair | 442-3050 |
| Scholarship | Mr. Joe Steiner, Chair | 657-8352 |
| Manufacturers Representatives | Mr. Mike Richards, Chair | 728-1950 |
| Public Information | Ms. Kristi Kline, Chair | 265-9031 |
| Auditing | Mr. Fred Wendt, Co-Chair | 723-8262 |
| | Mr. Chip Johnson, Co-Chair | 728-1880 |

## MWPCA COMMITTEES

| | | |
|---|---|---|
| Honors and Awards | Mr. Barry Damschen, Chairman | 449-8627 |
| Membership | Mr. Fred Wendt, Chairman | 723-8262 |
| Long Range Planning Committee | Mr. Scott Anderson, Chairman | 444-2406 |
| Government Affairs | Mr. Bill Leonard, Chairman | 862-3600 |
| Education Committee | Mr. Howard Peavy, Chairman | 994-6130 |

## MSAWWA COMMITTEES

| | | |
|---|---|---|
| Small Systems Committee | Mr. Henry Elbrecht, Chair | 447-8453 |
| Membership | Ms. Michele Marsh, Chair | 443-1373 |
| Honors and Awards | Mr. Gerry Lukasik, Chair | 721-5570 |
| Constitution and By-Laws | Mr. Ralph Dunahoo, Chair | 278-5821 |
| Nominations | Mr. Dan Fraser, Chairman | 444-2406 |
| Legislative | Mr. Al Towlerton, Chair | 259-5036 |
| Education | Ms. Donna Jensen, Chair | 444-4549 |
| Minority/Women Affairs | Mr. Lyle Meeks, Chairman | 278-5821 |
| AWWA Fuller Award | Mr. Mike Patterson, Chairman | 782-2311 |

## 1992-93 MSAWWA BOARD OF DIRECTORS/EXECUTIVE COMMITTEE

Past Chairman

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444-2406
FAX 444-1374

Chairman

Mr. James L. Kaercher
7323 Charolais
Billings, Montana 59106
656-6399
FAX 656-6398

Chairman Elect

Mr. Steve Ruhd
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FAX 278-5751

National Director - 1991/1993

Nr. Dick Nisbet
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447-8426
FAX 447-8460

Senior Trustee

Mr. Alan Towlerton
275 Nubia Place
Billings, Montana 59105
259-5036

Vice Chairman

Mr. Chip Johnson
3201 Russell Street
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728-1880

Junior Trustee

Mr. Terry Johnson
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322-5335

Secretary Treasurer

Ms. Donna Jensen
Water Quality Bureau
Cogswell Building, Room B-201
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## 1992-93 MWPCA BOARD OF DIRECTORS/EXECUTIVE COMMITTEE

National Director

Ms. Kristi Kline, Superintendent
City of Havre WWTP
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Mr. Scott Anderson
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761-7004

Junior Trustee

Mike Rubich
MSE Incorporated
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Butte, Montana 59701
723-8213

Executive Secretary

Mr. Dick Pedersen
609 S. Sanders
Helena, Montana 59601
444-0205

PWOD Director

Mr. Tim Hunter, Superintendent
Sewer Division
201 West Spruce
Missoula, Montana 59802
721-0111

# MWPCA NEWS

## Barry Damschen Presented with Bedell Award

The Arthur Sidney Bedell Award was presented to Barry Damschen at the Montana Water Pollution Control Association's annual conference. The award is given once every three years to someone who provides extraordinary personal service to a Member Association. Barry was an obvious choice for the award due to his commitment and dedication to MWPCA. Even though he owns and manages a very busy engineering firm, Barry has found time to be actively involved in the organization. Barry has "gone through the chairs" and has just completed his term as President of MWPCA. He has left in his wake a more diverse and dynamic organization. Barry's efforts certainly did not go unnoticed in that he was elected to represent MWPCA as Federation Director, a position he will hold for three years. Barry was very deserving of the award and we are proud to have him as an active member of our organization.

### MWPCA STUDENT CHAPTER

A new student chapter of the Montana Water Pollution Control Association was recently formed upon the request of a group of students at Montana Tech. The new chapter is called the "Environmental Engineers of Montana Tech" and will have about 20 members. The Chapter Officers will be:

Mark Severson - President
Sally Hayes - Vice-President
Garret Watts - Treasurer
Shawna Chapman - Secretary

The Association is excited about this new group of young members showing an active interest in the organization.

# ACT NOW

# HALF PRICE MEMBERSHIPS

The Montana Association is once again offering the tremendous bargain of ½ price memberships to encourage sign up of new members. A complete application with a check for one half the normal membership fee, should be submitted to Fred Wendt, Dick Pedersen or Scott Anderson. **Members** - Whoever signs up the most new members will be eligible for a valuable gift; to be presented at the annual conference. Contact Fred Wendt at 723-8262 for information.

## WEF REGIONAL MEETING

Kristi Kline

The 1992 WEF Regional meeting was held in Seattle on June 4-6, 1992. Twenty Member Association leaders were present along with WEF Vice President Phil Gerwert; Pat Karney, Deputy Executive Director; and Shirley Rollins, Manager-Association Programs.

The main focus of this year's meeting was participating in developing a vision of what we think the Federation, as an organization, should become in the future. Mr. Ron Galbraith led the group in a lively discussion of visions and perceptions. A summary of all ideas from all of the Regional meetings held this year will be provided to the entire membership for review.

MA leaders exchanged ideas and suggestions from their own associations dealing with membership recruitment, annual meetings, handling mailing lists, and how to develop MA leaders. MA leaders were given a chance to voice suggestions to WEF officers and staff on issues MA leaders would like to see discussed. Some of those suggestions were: 1) establishing a West coast regional office; 2) a pilot program that would include a Speakers Bureau to include also trainers who would be willing to help MA's; 3) enlarging specialty conferences to serve as a regional conference; 4) the need for our assistance in informing elected officials and if it could be done on a national level as with the Leagues of Cities and Towns.

Regional Board of Control Directors met in a short meeting with Phil Gerwert to discuss and review upcoming issues for the fall meeting of the entire Board of Control.

## MWPCA NAME CHANGE ??

The Water Pollution Control Federation, after a protracted process of selection, changed it's name to the Water Environment Federation. The new name is thought to better reflect the expanded role of the Federation and to put more positive terms in the title of the organization. Although not required, member associations are now considering whether they should change their names to reflect what the Federation has done. Montana members will be contacted before the 1993 annual meeting through a formal voting process to determine if we should change the name of our association. Names other than the Montana Water Environment Association are possible. If you have any ideas, contact Scott Anderson or Dick Pedersen.

# MONTANA SECTION AWWA DIRECTOR'S REPORT

*Richard A. Nisbet, P.E.*
*MSAWWA National Director*

The Board of Director's meeting was held June 18 and 22, 1992 in Vancouver, British Columbia. The Board met all day on June 18 and the following actions were taken:

1. Confirmed William H. Miller as AWWA Treasurer for a term to commence June 1992 until 1996.
2. Approved a crystal "iceberg" as the recognition piece for the AWWA Award of Merit which recognizes those individuals outside the water industry who have demonstrated outstanding service in support of the principles of AWWA in providing better water for people.
3. Approved in second reading an amendment to the AWWA Bylaws stating that all candidates for the offices of Vice-President and Treasurer must be Active, Life or Honorary Members of the Association, and outlining the qualifications for the office of AWWA Treasurer.
4. Approved 11 AWWA Standards.
5. Approved recommendations for the formation of a Public Advisory Forum to advise the officers and Directors of the Association if matters of policy, programs, and services that concern the consuming public. These recommendations will be forwarded to the General Policy Council for incorporation into the Governing Documents.
6. Ratified the report on Water Quality 2000 which presents specific recommendations from education to financing following three basic strategies:
    A. Preventing pollution and water resource degradation.
    B. Increasing individual and collective responsibility for water resource protection.
    C. Planning and managing water quality and quantity on a watershed basis.

On the morning of June 22, the new board met and approved the committee's appointments selected by President Elect Foster Burba.

During the afternoon, the board spent several hours discussing the reorganization of the AWWA Board and Administrative bodies for the 21th century. This was a key function of the Board of Directors for the past year and a half. It was also anticipated that this would be the final review before the consultant put the final report together for the January Board of Director's meeting. The review generated a tremendous amount of discussion particularly when it came to the one vote concept versus the concept where the larger sections have more votes on the board. I think it is something that the small sections really have to keep close tabs on. There is a movement to get the representative on the board more in line with the number of members which would definitely not be in our best interests.

Carol and I took time ahead and after the meeting to enjoy British Columbia, and I can say that when they say Beautiful BC on their license plates it is really true.

Respectfully Submitted!

## 1993 FULLER AWARD RECIPIENT

The fuller award is rewarded for distinguished service in the water supply field and in commemoration of the sound engineering skill, the brilliant diplomatic talent and the constructive leadership of persons in the association that characterized the life of G.W. Fuller.

### PERSONAL HISTORY OF THE 1993 RECIPIENT

He was born and raised in Texas. He became a Montana transplant via work related activities. He is married and has four children. His greatest passion is probably elk hunting. Though he will no doubt claim otherwise, it is generally thought that he has yet to become very proficient at it, though he has stumbled onto a couple during his many years in Montana. He is especially fond of late season hunts on snowshoes, as he may (or may not) be willing to explain. He is an accomplished shotgunner, and bird hunting is also something he really enjoys.

He enjoys cooking, with cajun dishes something of a specialty. He claims to possess one of the world's better recipes for chili, though this has been heavily disputed at times. He seems to think that any dish lacking picanti sauce or tabasco is bland "yankee" food. Wine making (chokecherry especially) and the required sampling can also be included in his list of interests.

He has been a member of AWWA since 1982 and has willingly served in all of the offices of the Montana section. He has been very active in the annual operator training school in Bozeman. He presents topics at the school annually and is generous in his, and his staff's time, in promoting section activities.

He is a graduate of the University of Houston with a B.S. degree in civil engineering. He worked six years as a consulting engineer and the past 11 years for a private water company. He is presently director of engineering and operations for the Mountain Water Company.

Congratulations 1993 Fuller Awardee -- **Gerald Lukasik**

## A POINT OF VIEW

Jan Boyle

# *ENVIRONMENTAL ETHICS AND ENVIRONMENTAL Education*

Adapted from "Environmental Science - Living Within the System of Nature")

"A thing is right when it tends to preserve the integrity, stability, and beauty of a biotic community. It is wrong when it tends otherwise." Aldo Leopold said this in his "*A Sand county Almanac*" some 40 years ago. It was how he defined a "land ethic", and it is what we know today as an "environmental ethic". Leopold also stated that an ethic is a limitation on freedom of action in the struggle for existence. Any ethic puts some constraints on total freedom. The frontier ethic emphasized freedom, including the freedom to bring about environmental degradation. We have certainly learned that freedom in this extreme is at odds with more basic freedoms or rights to breathe clean air, **drink clean water**, eat uncontaminated food, and enjoy a clean environment. A sound environmental ethic would encourage human actions and behavior that were integrally connected to the laws of ecology. An action would be judged by whether it was bad or good **ecologically**. How do we develop this type of approach to our environment? Environmental education. This learning process might well be the focus that guides us in that positive direction.

Environmental education is not simply conservation, outdoor resource management, or nature study. It is not concerned with indoctrinating students on **what** to think, but rather on helping them develop skills on **how** to include environmental considerations in their thinking. Environmental education is an **active** process dealing with humankind's relationship with nature and human-made surroundings. Environmental education should consider the environment in its totality - natural and human-made, ecological, political, economic, technological, social, legislative, cultural, esthetics. It should be interdisciplinary in its approach. It should emphasize active participation in preventing and solving environmental problems. And it should be a continuous lifelong process, both in school and out of school.

In the fall of 1975, an international environmental education workshop was held at Belgrade, Yugoslavia. The Charter that resulted from that meeting established the goal of environmental education:

> To develop a world population that is aware of and concerned about the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.

Earth Day, 1990, said it well, "Think globally, Act locally." Maybe a perspective for future Earth Days should include, "Think and Act Ecologically."

# SMALL WASTEWATER SYSTEM AWARD TO TOWN OF EKALAKA

Tom Slovarp, WQB

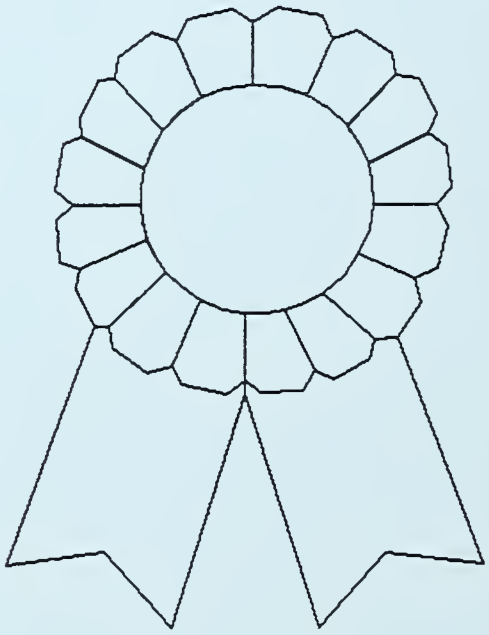
The first annual "Small Wastewater System Award" was presented to the Town of Ekalaka, Montana by the Montana Water Pollution Control Association (MWPCA) at its annual conference in Billings. Elston Loken, who as wastewater system operator was instrumental in the town earning the recognition, accepted the award on behalf of the Town of Ekalaka from Dick Pedersen, Secretary of MWPCA.

The community was selected for the award based on their interest in preserving water quality, which was demonstrated by their initiative in constructing, operating and maintaining a new wastewater treatment facility.

The town struggled to operate the old Chicago Pump Activated Sludge system, constructed in 1948, but was unable to meet their permit discharge limits. In order to correct the situation the town initiated and obtained grant funds from the EPA Construction Grants (including Innovative and Alternative funds for soil cement lagoon lining) and Community Development Block Grant (CDBG) programs for construction of a wastewater treatment facility consisting of three (3) aerated lagoons and a pump station. The system was designed by Dayton Alsaker of Prairie States Engineering.

The treatment facility had some start-up and equipment problems with their aerators, but through the determination of Alyce Kuehn (Town Clerk at the time) and Elston Loken they have prevailed in resolution of the problems. Through Ekalaka's efforts a number of other small communities around the state have had their aerator equipment problems addressed. The town of Ekalaka and Elston Loken are dedicated to providing excellent operation and maintenance of their wastewater facilities.

Congratulations to the Town of Ekalaka!



# Positive Visibility

*Kristi Kline*

With new regulations being enforced in the water environment, and rising costs associated with this, it is even more important for the **MSAWWA/MWPCA Joint Public Information Committee** to continue our efforts to assist you in projecting a positive image to the public. We need to assure the public that we take our jobs seriously and are concerned and dedicated to protecting the public and the environment. Schools and teachers are making great strides in environmental education. They will need our help to develop and understand a balanced educated view on the water environment.

The challenge of informing the public will not be able to be accomplished the same way by everyone. You need to find a positive image that fits your style. Look at the list of possibilities and try one that you feel comfortable with. Even exhibiting a positive visibility in everyday actions will help project your concern and dedication.

This list is endless. If you have a suggestion that has worked well for your facility or council/public meetings, pass them along to us. We are all in this together and the more we work together, our goal of reaching the public in a positive approach will be achieved.

## POSITIVE VISIBILITY

**Provide tours of facility (public or private)**

- Schools (Grade, Jr. High, High, and College)
- Teachers
- Senior Citizens
- Public Officials
- Environmental Groups

**Participate in a Speakers' Bureau**

- Career Days at Schools
- Science Fairs (judging, provide information for projects)
- Local civic group program presentations

**Press Release**

- Local paper press release (implementation of cost saving program at facility or development of one)
- Send out conservation, awareness tips in monthly billing
- Recognition of an individual of your facility for outstanding performance or attendance at workshop, seminar upgrading their certification, etc.
- Provide environmental handouts with facilities/cities name on them

**Involvement with Local Groups**

- Participate in Montana Watercourse WET program activities
- Participate with local Fish and Game projects, Soil Conservation Service projects, and County Health Board

**Provide Uniforms or Other Apparel to Provide Recognition of Your Organization**

- Jackets, hats, tee shirts, brochures, etc.

**Adopt-A-School Program**

- Distribute WEF and AWWA Educational books and videos for teachers
  - Grade School Levels
  - Jr. High Levels
  - High School Level
- Participate in Science program/projects at all school levels
  - Classroom presentations
  - Provide equipment, supplies for projects
  - Assist projects
  - Resource person for teachers

# NEW STORM WATER PROGRAM BEGINS

*Roxann Lincoln, Water Quality Bureau*

In mid-January 1992, the Water Quality Bureau began it's Storm Water Runoff Program. Certain provisions of the Clean Water Act require states to begin permitting storm water discharges associated with industrial activity and for medium (100,000 to 250,000 in population) and large municipalities (>250,000 in population).

In most cases, storm water runoff discharges directly to surface waters without treatment. Therefore, urban stormwater runoff has been determined to be a significant source of pollution to surface waters. EPA has targeted a number of industrial activities involving storm water which must be permitted beginning October 1, 1992.

The main emphasis of the permitting strategy will be the use of best management practices (BMPs) specific to a variety of industrial activities in order to prevent surface water degradation from storm water runoff. Examples of BMPs include diverting runoff away from areas where materials are used which could result in pollution, storing of toxic or hazardous substances indoors or in secondary containment structures, or having spill response procedures for the use of certain chemicals.

For more information concerning the Storm Water Runoff Program, contact Roxann Lincoln or Amanda Domino at 444-2406

◆

# TOP TEN PUBLIC WORKS LEADERS ANNOUNCED

Great Falls Tribune, May 23, 1992

*Congratulations to Erling Tufte, who was honored recently as one of the top 10 professionals by the American Public Works Association.*

*No Montanan had ever won this aware before and it was only the third time it had been given out in the Northwest.*

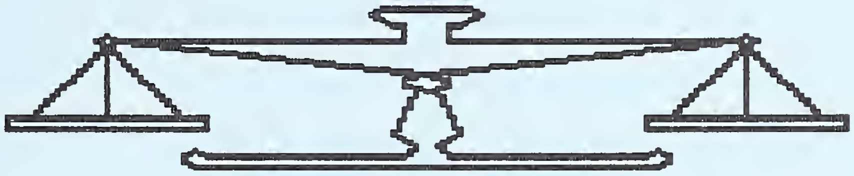
*Tufte is highly regarded in Great Falls for bringing professionalism and accountability to the Public Works Department. Among his many accomplishments was the EPA's recognition of the city's wastewater treatment plan as the nation's best.*

The National Public Works Weeks theme of "Quality of Life Through Public Works" is more than just a promotional slogan. It is a commitment by the over 26,000 APWA members to enhance the delivery of public works services to the citizens of the communities they serve. Contingent with the May 17 to 23 celebration of National Public Works Week was the selection of the Top Ten Public Works Leaders of the Year.

A notable panel of judges representing the key functional areas in the public works field chose the winners. This year's panel included former APWA President Harold Smith, city engineer, Des Moines, Iowa; Herbert S. Fain, assistant director of utilities, Houston, Texas; Claire Felbinger, assistant professor and academic coordinator, Cleveland State University; Karl F. Johnson, professor of public administration, University of Missouri-Kansas City; and Edward B. Rodie, editor, PUBLIC WORKS.

# FINDING THE COMMUNICATIONS BALANCE

by Nina DeVoe



Setting up a new public information program in a utility can often be challenging. Utilities are many times managed by engineers who are logical and methodical in their thinking. On the other hand, public information programs are often managed by journalists, marketing, or public relations professionals who are creative thinkers.

Additionally, public information professionals have a role that forces them to have one foot in the public arena and one in the utility. They must view things as the public does, which may seem different from the utility department's perspective. Some would say that the public information professionals' value is their ability to bridge both "sides."

As the cost of water continues to rise, customers now want to know why this water, once plentiful, obtained simply by turning on the tap, is continuously rising in cost. Our more sophisticated audience of customers is also concerned about a broad range of environmental issues, of which water, a needed and valuable resource, is in the forefront.

How then can we find a happy communication medium between the public information person and the utility administration, and how do we communicate an idea between right-brain and left-brain thinkers?

The public information coordinator may find him or herself in the position of trying to convince upper management to approve public information projects that cannot be quantified in dollars or number of gallons saved. Before proposing a new public information campaign you may want to consider developing a strategy unique to your organization.

Here are some tips to help you develop that strategy.

- *Involve the highest level of administration in the beginning. Get your project on their agenda.*
- *Arrange brainstorming sessions so that their ideas are implemented also.*
- *Regularly share information. Newsletters and/or a clipping service are useful.*
- *Include employees in the information disseminating chain. Show how empowering employees with information improves employee morale.*
- *Demonstrate how your program can benefit all divisions of your organization.*
- *Listen for areas that may be hot buttons.*
- *Be flexible. Have a plan "B" available. Learn to dance.*
- *Be crystal clear in your communications. Limit P.R. jargon to those who are familiar with the business.*
- *Be a good listener. Listen for clues on how the program can benefit the utility and public concerns.*

- *Justify your projects. Use clear communications in your justification statement. Make sure the benefits of implementing your program can be easily related to the goals and objectives of your organization.*

- *Do your homework, research your concepts with others in the business to be knowledgeable about new trends and practices.*

- *Management is concerned about cost. You should be too.*

- *Expand your writing style skills. Some engineers like proposals, others white papers, others informal communications. Engineers think in terms of numbers, make sure yours are correct.*

- *Use charts and graphics to help illustrate your point. Here is an area where your creativity can shine.*

- *Make sure you understand the approval process and all the parties involved in obtaining it. This is essential for large organizations. The same goes for the procurement process.*

- *Protect your organization. If you are aware of a potential trouble maker or a compromising position your organization might be placed in, inform management and offer solutions. Be the devil's advocate. Try to think of potential problems or difficult questions, then resolve them before they come up.*

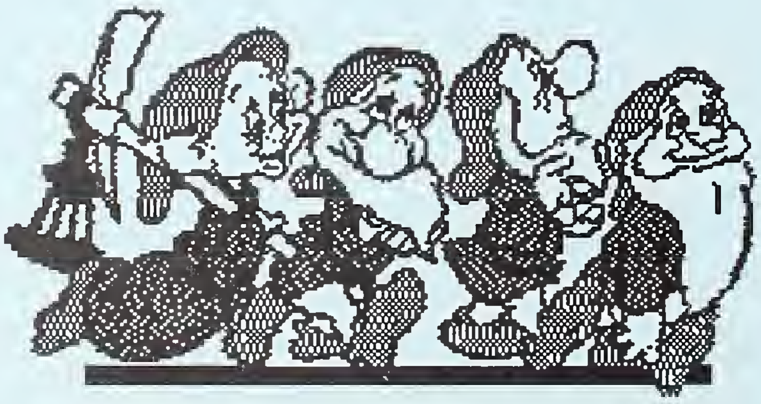
- *Give credit to your administration. Understand that you would not have been successful in your campaign without their support. Adversely accept responsibility for failures.*

- *Keep apprised of city government and water industry concerns. For example, if City Council is writing an ordinance to ban billboards, don't plan on using billboards to advertise a water conservation message. If available, get on the list to receive a copy of the Council's agenda and industry newsletters.*

- *Remembers to thank everyone in the organization that helps you. Especially anyone who goes out of their way to help.*

- *Share thank you letters and positive responses from the public about your programs with the administration.*

Nina DeVoe is a senior communication specialist with the City of Houston Department of utilities and develop water conservation public information programs. Contact DeVoe at the City of Houston, Department of Utilities, Water Customer Service Center, 4200 Leeland, Houston, TX 77023 or by calling (713) 295-5550.



# WHAT'S UP WITH THE PUBLIC WATER SUPPLY PROGRAM?

Jim Melstad

As you probably know by now, the 1991 Montana Legislature authorized public water supply service connection fees as supplementary funding for the Public Water Supply Program (PWSP) in the Water Quality Bureau. The first annual fee payments for fiscal year 1992 (July, 1991 through June, 1992) were due on March 1, 1992. Subsequent annual payments will be due on March 1 of every year. The PWSP will notify each public water supply near the end of the calendar year regarding the fee amount and due date. About 97% of the 2128 public water supplies in Montana have paid their service connection fees for fiscal year 1992. This accounts for about $535,000, or almost 99% of the total amount that was due. **This incredible response is appreciated** and has motivated us to begin the task of building program capacity to help you meet the challenges of the 1986 amendments to the Safe Drinking Water Act.

Some of the new program developments made possible by the fees are described below:

1. Hired **Chris Bailey** as a Program Assistant for the PWSP and for Rosie Fossum in the Certification Program. Among many other things, Chris put together this Clearwater issue for editor Scott Anderson.

2. Hired **John Camden** and **Rick Cottingham** for the PWSP. John will be the new surface water treatment expert and Rick is the new training officer. (We "stole" these fine two people from the City of Helena water treatment plant staff.) Our training and technical assistance capacity will increase significantly with the addition of John and Rick.

3. We are currently unable to hire the remaining 1.5 new staff that we have authority for because of a hiring freeze. One of these positions would be placed in the new DHES office in Polson to handle public water supply issues west of the divide.

4. Proposed contracts for technical assistance services are in the works. The contracts would provide statewide assistance to public water supplies in addressing technical and regulatory questions.

5. The PWSP is developing vulnerability assessment (VA) criteria for the Phase I, II and V contaminants that you must sample for by 1995. Without acceptable criteria, EPA would require all community and non-transient public water supplies to sample quarterly for at least one year at a cost of **$6600** or more. Public water supplies that serve over 500 people will have to sample in 1993. We will be contacting those systems again soon about the VA criteria.

6. We have begun precise location of our public water supply sources using global positioning equipment. This technology utilizes orbiting satellites to locate the latitude and longitude of a water source within an accuracy of about 6 feet. The elevation of the source is also located within about 10 feet. If someone from our office contacts you for assistance in locating your water sources, please rest assured that it is a legitimate request. The data will have many applications. For instance, it will allow us to respond quickly after toxic chemical spills and will also be very useful in wellhead protection efforts.

Also, you should be aware that the Board of Health and Environmental Sciences authorized payment of plan review fees on Friday, July 31. The Board also adopted rule changes that adopt revised design construction standards for public water and wastewater systems. If you should have any questions, please call or write as described below.

Once again, we appreciate your cooperation in making the first fee payments go so smoothly. We will strive to put the fees to good use. If you have any questions about the program, please call at 406-444-4549, or write to us at Rm. A201, Cogswell Building, Helena MT 59620. Thank you!!!

## *PLAN REVIEW PROGRAM PREPARES FOR CHANGES...*

In response to the increasing demands of the Safe Drinking Water Act, the department is taking a close look at all of it's program functions within the Public Water Supply Program. Our goal is to maximize our potential to maintain primacy, but not at the price of effective state drinking water programs.

Montana's Public Water Supply Act requires the department to establish design standards and review plans for public water and sewer systems. This ensures the development of systems that protect public health and state waters. The department is looking at ways to streamline plan review and still provide the public health benefit intended under the law.

Recent legislation provided authority to delegate plan review of water and sewer main extensions to qualifying local governments. This authority is limited to extensions serving 50 or less connections. The rules regulating delegation were recently approved by the Board of Health and will likely become effective early this fall. The department is preparing guidelines describing how delegation will be granted to qualifying local governments.

The department has also prepared a certified checklist for water and sewer main extensions. This checklist will be used as a tool to improve the turnaround for the review and approval of extensions.

The intent is to hold design engineers more accountable for the satisfaction of state design standards. This is accomplished by having them certify, through the checklist, that the plans satisfy state design standards. The department will then review only the checklist. The department worked with three of the state's professional engineering associations to develop this approach to plan review. We hope to begin using the checklist this fall.

The Board of Health also adopted revised design standards prepared by the department. The new design standards are essentially the same as the old design standards. The department wanted to eliminate the use of the " Ten State Standards" and incorporate a few standard deviations consistently given over the years. The new standards are described in department circular's WQB 1, WQB 3, WQB 4, and WQB 5. We are still using the Ten State Standard for community sewer works, but hope to have it revised into Circular WQB 2 early this fall.

The new rules adopted by the Board of Health also established fees for plan review as required in Senate Bill 407 (1991 legislature). The fees are set in six schedules depending on the type of project and which sections of the design standard apply. These fees will be effective sometime this fall.

The department will be sending out public notices regarding the above mentioned rules in the near future. If you have any questions regarding these rules or changes in the plan review program you may call Dave Aune at 444-4549.

# LEAD AND COPPER RULE STATUS IN MONTANA

by Roy A. Wells, WQB

Exposure to lead has been recognized as a cause of adverse health effects on humans for a long time. Lead in drinking water was regulated for the first time in 1925 by the U.S. Public Health Service. The Lead and Copper Rules are the latest in a series of efforts to protect public health from this threat. Adverse effects on children's mental and physical development and adult blood pressure are the primary reasons for the new rules.

The first step in implementing the rules is monitoring. Monitoring is no easy task when the rules require obtaining samples at times and locations most likely to show maximum concentrations of lead and copper, i.e. first draw samples from kitchen or bathroom taps.

The state's two "large" water systems (serving more than 50,000 persons) started monitoring at the beginning of this year. They are now in their second six month period of monitoring. "Medium" size systems (3301 to 50,000 persons served) received EPA monitoring guidance manuals from the Water Quality Bureau (WQB) this spring. Their first six months monitoring period began July 1 of this year.

"Small" systems (serving 3300 persons or fewer) are not required to start monitoring until July 1 of next year. It should be noted that the rules are applicable to non-transient non-community systems (e.g. schools, businesses) as well as community systems. The WQB plans to send EPA monitoring guidance manuals to the small systems in January of next year.

The state has not as yet assumed primacy for the Lead and Copper Rules. None the less, the WQB will try to assist water systems with questions concerning these rules.

# *SAMPLING AND ESTIMATED COSTS FOR THE NEW RULES ON SOCs, VOCs AND INORGANIC CHEMICALS FOR PUBLIC WATER SUPPLIERS*

Gary Wiens, *WQB*

## Health Effects

Many synthetic organic chemicals (SOCs, mainly pesticides) and volatile organic chemicals (VOCs, including many solvents) and some inorganic chemicals (IOCs, such as barium, cadmium, etc.) can affect human health even at low exposures. Collectively, these chemicals can cause a wide range of health problems affecting the kidneys, liver, lungs, skin, and the circulatory, digestive, reproductive and nervous systems. The 1986 amendments to the Federal Safe Drinking Water Act require monitoring and treatment of water to protect the public health from these contaminants.

## New water sampling requirements

Two new rules have been adopted by the Environmental Protection Agency (EPA) that will significantly **increase the chemical sampling requirements** for community and non-trasient non-community public water supplies. The rules are called the "Phase 2" and "Phase 5" rules. The Phase 2 rule sets maximum contaminant levels (MCLs) for 35 chemical contaminants and the Phase 5 rule sets standards for 25 chemical contaminants. The Phase 2 rule also effectively incorporates the contaminants regulated by the Phase 1 rule. The contaminants regulated by these rules include numerous SOCs, VOCs and IOCs. Some of the contaminants are ones that you have sampled for in the past, but most have not previously been regulated. The Public Water Supply Program (PWSP) of the Montana Department of Health and Environmental Sciences (DHES) has not yet adopted these rules, but will attempt to implement them under an agreement with EPA. EPA requires compliance with the rules whether or not Montana has adopted them.

These rules also create a **standardized monitoring framework** for most of the chemical contaminants regulated in the past, present and future. It is important to note that sampling for most of the chemical contaminants **is now required to be from each individual source and not from the distribution system.** These two new rules are separate from the requirements of the new Lead and Copper Rule. These rules also do not change the current sampling requirements for the radionuclides (gross alpha and uranium testing etc.), which must still be tested every 4 years. Please note the following information on **monitoring requirements** and **sample costs.**

## Standardized monitoring framework and waivers

As mentioned, the standardized monitoring framework will establish a regular sampling frequency for most chemical contaminants. **Nine-year compliance cycles** have been established that will begin in January of 1993. The cycles will repeat and each cycle will contain **three three-year sampling periods.** Routine sampling requirements for each water source may be quarterly, annually, every three years or even longer, depending upon each particular contaminant and the vulnerability of the source. **The results obtained during the first three year period will determine most of your future sampling requirements.** It is likely that most supplies will be able to **reduce their sampling requirements significantly after the first year.**

Waivers may be granted to either reduce or avoid sampling for most of the contaminants **if** it is demonstrated that a source is not vulnerable to contamination. Because EPA has not provided any national guidance for issuing waivers, we have not yet developed our own guidance. However, **we plan to contact you again in the late summer or early fall regarding waiver procedures.** It is likely that we will request that you collect much of the information necessary to obtain waivers. It is also likely that we will request that you take **at least one sample** for most of the contaminants to help justify any waiver requests.

Beginning in the first quarter (January through March) of calendar year 1993, samples must be taken **from each source**, unless waivers are granted. (Sampling for nitrate cannot be waived). **Supplies that serve 500 or more people must begin sampling in January of 1993.** (Smaller systems will begin sampling in either 1994 or 1995, depending upon size.) **Quarterly sampling** for at least one year for most contaminants **may be necessary** for those sources that are suspected or known to be vulnerable. For instance, surface water supplies that use water from lakes, rivers and streams with developed, uncontrolled watersheds will have to sample quarterly for one year for the SOCs and VOCs. Waivers for monitoring of groundwater wells may also be difficult to obtain in areas of known chemical use and storage, or where leaking underground storage tanks are nearby.

You will have to take at least one sample from your distribution system for asbestos if you have asbestos cement water mains, and one sample from each source for asbestos if your source(s) are vulnerable to asbestos contamination. Surface water supplies will have to sample quarterly for nitrate for at least one year. As mentioned, we will contact you in the near future to give you a better idea of how to proceed with waiver requests. We also plan to give you the names of the contaminants that you must monitor for, and a list of labs certified for these tests.

Sampling costs

To assist you in budgeting for next year for the new sample requirements, we have included some **approximate** sample analysis costs for your consideration.

- SOCs ≈ $800 to $1400, depending upon the lab
- VOCs ≈ $120
- nitrate and nitrite ≈ $25
- Other IOCs ≈ $180
- asbestos ≈ $300 to $500, depending upon the lab
- dioxin ≈ $700 to $1500, depending upon the lab

Please remember that **each source must be sampled**, not the distribution system (with the exception of distribution system samples for asbestos where asbestos-cement water mains are present). Systems serving **over 3300 people** may request that the laboratory composite up to 5 of **their own** source samples into one analysis. Systems serving **3300 people or less** may request that the laboratory composite 5 or more of source samples **from different systems** into one analysis. This would cut the sample costs by 80% if no contaminants are detected. However, if contaminants are detected, samples from each source will have to be analyzed individually. Compositing is still recommended since it is probable that most contaminants will not be detected. **We have suggested public water supplies to budget for the following worst-case sample analysis costs for calendar year 1993:**

A. SURFACE WATER SUPPLIES (with vulnerable or uncontrolled watersheds)*

- SOCs - enough for 4 quarterly tests
- VOCs - "
- Nitrate and nitrite - 4 quarterly tests
- Other IOCs - enough for 1 test
- asbestos - enough for 2 tests if you have AC water mains, enough for 1 test if you do not
- dioxin - enough for one test

(Approximately $6660 per source if you do not composite samples, approximately $2756 per source if you are able to arrange composite analyses in the lab for 5 samples)

B. SURFACE WATER SUPPLIES (with controlled A-Closed watersheds)*

- SOCs - enough for 1 test
- VOCs - "
- Nitrate and nitrite - 4 quarterly tests
- IOCs - enough for 1 test
- asbestos - enough for two tests if you have AC mains, enough for 1 test if you do not

(Approximately $1900 per source if you do not composite samples, approximately $ 920 per source if you are able to arrange composite analyses in the lab for 5 samples. Although it is very unlikely, sample costs could go up if the source is found to be vulnerable for some reason.

C. GROUNDWATER SUPPLIES*

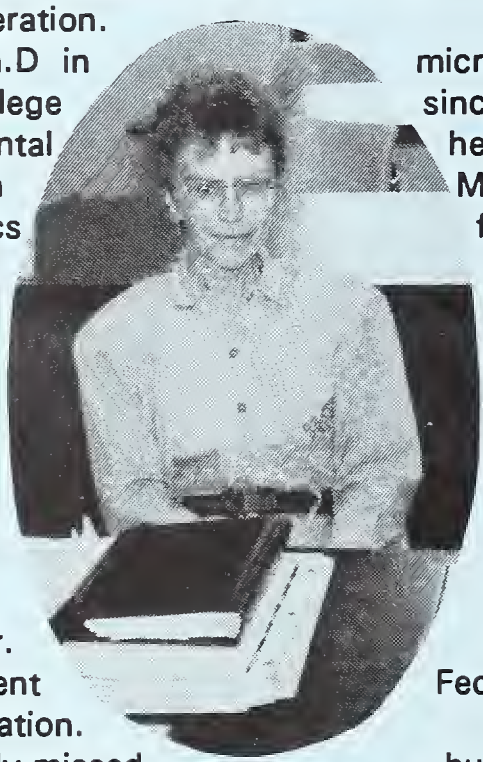
Same as surface water supplies with an uncontrolled watershed (item A above).

**Please remember** that we intend to contact you in the near future about waivers. **The above costs are therefore worst-case costs,** but it is best if you plan for the worst now. We will do our best to legitimately avoid any unnecessary sample costs through the waiver process. **Although we cannot promise anything at this time, we hope to limit sampling to one quarter for those sources that are not in vulnerable locations.** If you have any questions, please contact the PWSP at 444-4549. Thank you !!!!!!

* Add $400 to the total costs if you have asbestos cement distibution mains.

# MARTHA ANNE DOW ACCEPTS POST AT OREGON TECH

Everyone working in the water and wastewater field will miss the presence of Martha Anne Dow as she moves on to accept a post as provost of the Oregon Institute of Technology. Martha was a vital and energetic force in the initial development of the Montana Environmental Training Center in 1988. She continued to reinforce that development serving as a member of the Steering Committee which is instrumental in setting directives for the training center. Martha was a key factor in the creation of the academic programs at Northern Montana College designed for students in the field of water and wastewater operation.



Martha received her Ph.D in microbiology virology from the Northern Montana College since 1976 when she became director of the environmental health, water quality program. She chaired Northern Montana's College Department of Science and Mathematics from 1986 to 1990, and then accepted a permanent position as Vice President of Northern Montana College in 1991. Martha remained actively involved with the water and wastewater profession even though her hectic schedule as Vice President kept her quite busy. Her interest in promoting training in the area of environmental quality earned her a position as President of the National Environmental Training Association (NETA) of which she is now a charter member. Martha is also a member of the Water Environment Federation and the American Water Works Association.

Martha will be sorely missed, but we all wish her well in her new and challenging position. Oregon Institute of Technology will be getting one of Montana's best!!!

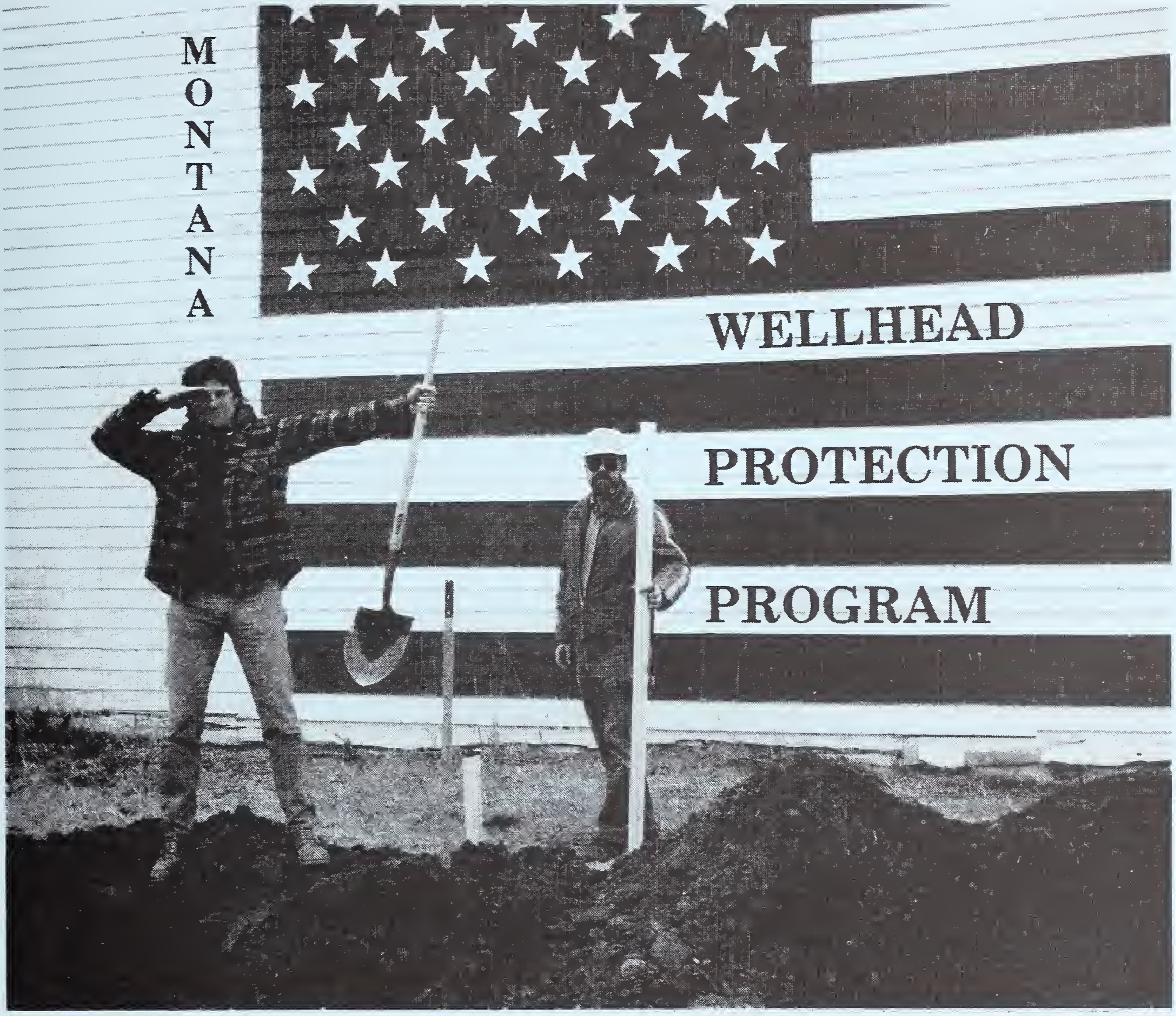


*Photo taken in 1987 at Hobson, Montana — Well installation to monitor groundwater quality.*

## MONTANA WELLHEAD PROTECTION UPDATE

*Carole Mackin, Environmental Specialist, WQB*

Montana's Wellhead Protection Program has been submitted to EPA for their approval as specified in the 1986 Amendments to the Safe Drinking Water Act. It took a year to put the plan together and a great deal of work on the part of the Wellhead Protection Advisory Committee.

The public also took part in fine tuning the draft plan into a workable final plan. Seven public meetings took place in May and June in Helena, Missoula, Great Falls, Bozeman, Billings, Glendive, and Kalispell. Those attending asked questions and commented on how the plan could be more effective.

A public hearing took place on July 10, 1992 before the Wellhead Protection Advisory Committee. The comments received were evaluated and incorporated into the plan for submittal to EPA.

For more information on protecting your water supply from contamination, contact Carole Mackin, Wellhead Protection Program Manager, at 444-5492.

# MONTANA GROUND WATER ASSESSMENT ACT

The Montana Ground Water Assessment Act (2-85-901 et seq. MCA) systematically funds efforts to evaluate Montana's ground water resources. Major legislative purposes are:

** Coordinating Montana's ground water data collection and information distribution efforts.

** Developing an extensive and better planned state wide ambient water-level and water-quality monitoring network.

** Creating an ambitious 21 year program to systematically evaluate Montana's ground water resources.

The Assessment Act is administered by the Montana Bureau of Mines and Geology and a statewide Steering Committee. Membership on the Steering Committee is shared by water-agencies in state and federal government; the university system; representatives of county and city governments; and water user groups. The Bureau will develop the program under the policy guidance of the committee.

The Assessment Act will strongly involve many regional and local groups. Local organizations will collect water-level information in regional areas; assessment studies, 1 to 3 counties in size, will involve local steering committees.

During the 1993 biennium, Montana funded the Assessment Act by changing several fees.

** Increasing licensing and renewal fees for water well drillers, water well contractors, and monitoring well constructors.

** Increasing the fee for Notices of Completion for Certificates of Water Rights (for wells-springs using <35 gallons per minute/10 acre-feet per year).

** Attaching a $1.00 per acre-foot fee to water permit applications for withdrawing ground water amounts 35 gallons per minute/10 acre-feet per year.

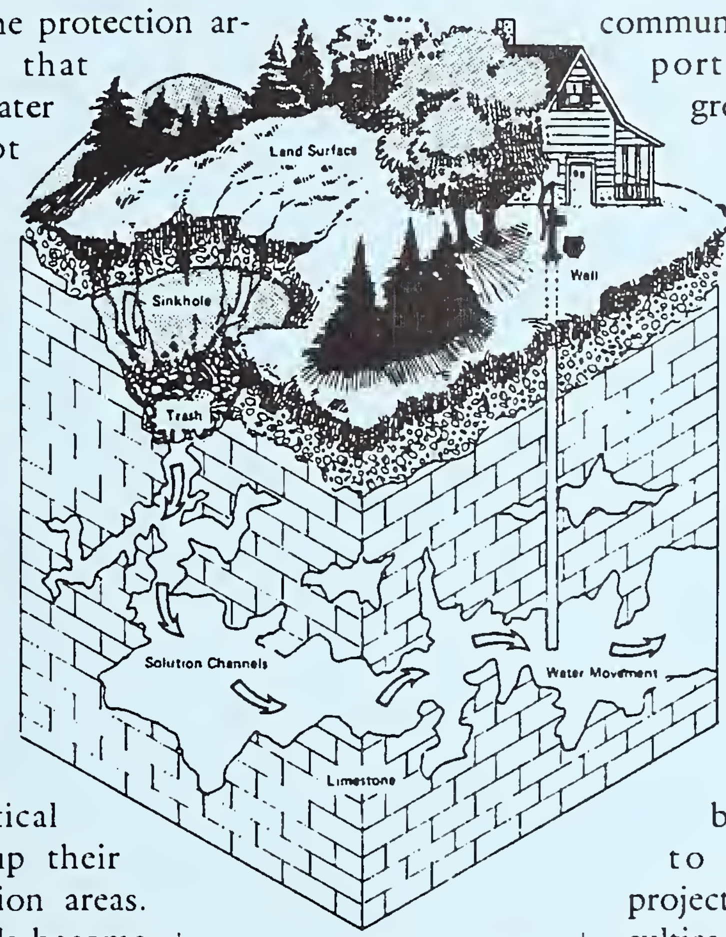
** Obligating a part of the per hook-up fee for public water supply systems.

In the 1995 and later bienniums, Montana will fund the Assessment Act by depositing up to $666,000 per year from the Resource Indemnity Trust Tax proceeds into the Ground Water Assessment Account. The diversion will delay the capping of the Resource Indemnity Trust Account for 1 year, and reduce increases in interest used for funding other programs.

For more information: Contact Tom Patton, Montana Bureau of Mines and Geology, West Park Street, Butte Montana 59701 (406) 496-4153.

# SCHOOLS TO LEARN THE ABC's OF PROTECTING THEIR DRINKING WATER

**Four schools in Montana have received special funding from the Water Quality Bureau to design wellhead protection areas around their school wells.** The protection areas will assure that each school's water supply does not become contaminated. Each school ranking #1 in its category will receive up to $2,000. Schools hope to document the multidisciplinary process they use to teach students about groundwater protection, putting the dollars to practical use in setting up their wellhead protection areas. If additional funds become available, those schools ranking #2 and #3 also will receive funding.



*Graphics reprinted with the permission of Virginia Water Resource Research Center and the American Clean Water Foundation from the 1992* Year of Clean Water Calendar.

Of the schools that applied for funding from the Water Quality Bureau, those ranking highest in the **high school** category were:

#1 Arlee School, Arlee
#2 Augusta School, Augusta
#3 Victor School, Victor

The schools ranking highest in the **elementary school** category were:

#1 Desmet School, Missoula
#2 Bonner School, Bonner
#3 Centerville School, Sand Coulee

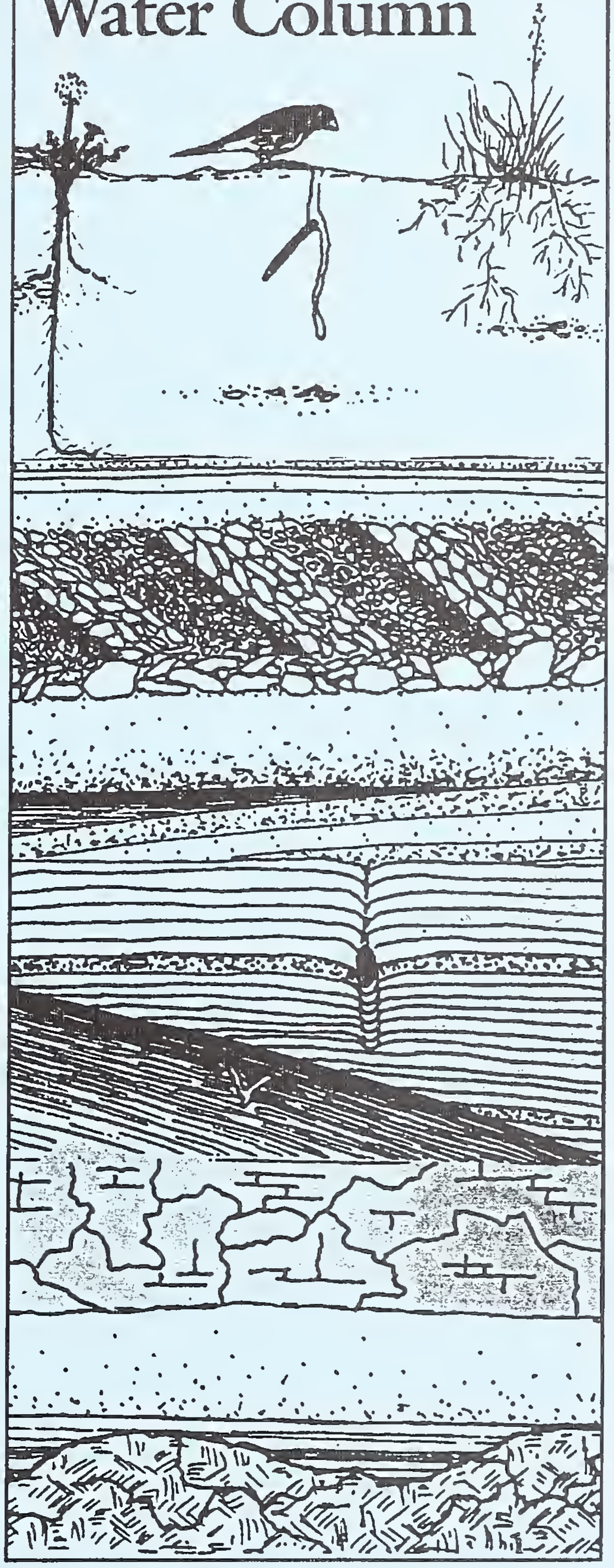
Projects will include a study of the school well and the quality of its drinking water. School children will inventory the community for potential sources of contamination that could affect the water in their well. Their inventory will start at the school to determine how the grounds and athletic fields are fertilized and irrigated and how chemicals are stored.

**The students may launch a project to educate their community about preventing groundwater pollution.** Their findings from the well study and inventory may be presented to the community to gain its support in keeping the groundwater clean.

Schools will document the class activities throughout the year. Videos of the projects will be available to other schools who want to start wellhead protection programs. The videos will describe how the teachers, administration and school board cooperated to complete the project and rate the difficulties they encountered.

**The goal is for each school to design a Wellhead Protection Plan that has lasting benefits for the community.** One of those benefits is to provide the school board, where appropriate, with information to apply for waivers from EPA monitoring regulations. This will save money for the community. The most important benefit of the school program, however, will be to protect the quality of each school's all-important drinking water. - *Carole Mackin, Environmental Specialist, WQB*

## The Ground Water Column



*Nicolyn Fleming, a student at Desmet School in Missoula collects a water sample from "her" well.*

# FIFTY-NINTH ANNUAL SCHOOL

## FOR WATER AND WASTEWATER OPERATORS AND MANAGERS

SPONSORED BY THE MONTANA WATER QUALITY BUREAU & MONTANA STATE UNIVERSITY
*Monday, October 5 through Thursday, October 8, 1992*
*Strand Union Building, Montana State University, Bozeman*

### *MONDAY, October 5, 1992*

| | | |
|---|---|---|
| **Registration** | 8:00 A.M. | Registration for Water School |
| **Joint Session** | 9:30 | Welcome from Montana State University<br>Welcome from Water Quality Bureau<br>School Logistics |
| | 9:45 | Your Part in a Good Certification Program |
| | 10:15 | Environmental Legislation |
| | 10:45 | Environmental Ethics |
| | 11:45 | LUNCH |
| **Wastewater** | 1:00 P.M. | Permits |
| | 1:45 | Pretreatment |
| | 2:15 | Sludge |
| | 3:00 | BREAK |
| **Water** | 1:00 | History |
| | 1:30 | Coliforms and Public Notice |
| | 2:00 | Lead and Copper Rule |
| | 2:30 | VOC's I, II, V |
| | 3:00 | BREAK |
| **Joint Session** | 3:15 | Dealing with the Drought |
| | 4:15 | Professional Development |
| | 5:00 | SOS Materials Distribution |

### *TUESDAY, October 6, 1992*

| | | |
|---|---|---|
| **Large Wastewater** | 8:00 A.M. | Treatment Processes and Operation |
| | 10:00 | Break |
| | 10:30 | Treatment Process and Operation (con't) |
| | 11:45 | LUNCH |
| | 1:00 P.M. | Treatment Process and Operation (con't) |
| | 2:00 | Sludge Bowl |
| | 3:00 | BREAK |
| | 3:15 | Sludge Bowl (con't) |
| **Small Wastewater** | 1:00 P.M. | Alternative Collection Systems |
| | 2:00 | Preventative Maintenance |
| | 3:00 | BREAK |
| | 3:15 | Lagoon Operation and Maintenance |
| **Water - Unfiltered** | 8:00 A.M. | Health Impacts of Surface Water & SWT Rules |
| | 8:30 | Criteria to Avoid Filtration |
| | 10:00 | BREAK |
| | 10:30 | CT Calculations for Unfiltered Systems |
| | 11:45 | LUNCH |
| | 1:00 P.M. | Reporting Requirements for Unfiltered Systems |
| | 2:00 | pH Meter Calibration and Maintenance |
| | 3:00 | BREAK |
| | 3:15 | Turbidity Meter Calibration and Maintenance |

| | | |
|---|---|---|
| **Water - Filtered** | 8:00 A.M. | Health Impacts of Surface Water and SW Treatment Rules |
| | 9:00 | Water Treatment Overview & Determination of Coagulant Dose |
| | 10:00 | BREAK |
| | 10:30 | Utilization of Iron and Alum Coagulants and Polymers |
| | 11:00 | Coagulant Feed Workshop |
| | 11:45 | LUNCH |
| | 1:00 P.M. | Polymer Feed Workshop |
| | 2:00 | Plant Process Control Program and Workshop |
| | 3:00 | BREAK |
| | 3:15 | CT Calculations for Filtered Systems |
| **Basic Science** | 8:00 A.M. | Math/Chemistry/Hydraulics |
| | 10:00 | BREAK |
| | 11:45 | LUNCH |
| | 1:00 P.M. | Groundwater Movement and Groundwater Model |
| | 1:30 | Well Construction |
| | 2:00 | Sanitary Problems |
| | 2:30 | Well System Disinfection |
| | 3:00 | BREAK |
| | 3:15 | Wellhead Protection |
| **Joint Session** | 4:00 | SOS Session |

## *WEDNESDAY, October 7, 1992*

| | | |
|---|---|---|
| **Wastewater** | 8:00 A.M. | Use of Wastewater Monitoring and Control Equipment |
| | 10:00 | BREAK |
| | 10:30 | Collection System Maintenance |
| | 11:45 | LUNCH |
| **Water** | 8:00 A.M. | Sampling Collection for Compliance |
| | 10:00 | BREAK |
| | 10:30 | Distribution System Dilemmas |
| | 11:00 | Distribution System Record Keeping |
| | 11:20 | Corrosion in Distribution Systems |
| | 11:45 | LUNCH |
| **Basic Science** | 8:00 A.M. | Math/Chemistry/Hydraulics |
| | 10:00 | BREAK |
| | 10:30 | Math/Chemistry/Hydraulics |
| | 11:45 | LUNCH |
| **Joint Session** | 1:00 P.M. | Safety |
| | 3:00 | BREAK |
| | 3:15 | Cross Connections (Mountain Water) |
| | 4:00 | SOS Session |

## *THURSDAY, October 8, 1992*

| | | |
|---|---|---|
| **Joint Session** | 8:00 A.M. | Disinfection<br>chemistry of chlorination<br>breakpoint chlorination<br>inactivation of microorganisms<br>types of chlorine<br>ozone/ultraviolet |
| | 10:00 | BREAK |
| | 10:30 | Emergency Operating Plans |
| | 12:00 | Wrap Up and Adjourn |
| | 1:00 | SOS Session |

# *PASSING EXAMINATIONS FOR FULL CERTIFICATION OR OPERATOR-IN-TRAINING (OT) 3/14/92*

### Class 1:
John Barkus, Havre, 1B-ot
Glenn Bies, Laurel, 1B-ot
Antonio Bonney, Butte, 1B-ot
Larry Brooks, Jr., Havre, 1C-ot
Robert Casey, Havre, 1C-ot
Benjamin Crater, Havre, 1C-ot
Bruce Drury, Havre, 1C-ot
Jerry Ellis, Missoula, 1B
Tana Faltrino, Havre, 1C-ot
Mark Fitzwater, Havre, 1B-ot*
Duane Gopher, Box Elder, 1C-ot
Leo Murr, Havre, 1B-ot*
Karen Pedersen, Havre, 1C-ot
Matt Pozega, Havre, 1B-ot
Wesley Rasmussen, Miles City, 1C-ot*
James Reardon, Havre, 1C-ot
Tim Reiter, Laurel, 1B-ot
Jon Rutt, Laurel, 1B-ot
Jerry Schindler, Missoula, 1A-ot
Charles Sharp, Havre, 1C-ot
William Strong, East Helena, 1C-ot
Robert Stubblefield, Helena, 1A
William Swassing, Kalispell, 1C
Kathy Terbovitz, Havre, 1C-ot
Jane Thompson, Havre, 1C-ot
Mark VanAntwerp, Manhattan, 1C-ot
John Volmer, Laurel, 1B
Donald Zinn, Havre, 1C-ot

### Class 2:
Abe Abraham, Wolf Point, 2A3B*
Danny Anderson, Poplar, 2C*
Robert Eskildsen, Kalispell, 2A3B
Dan Gregory, Lewiston, 2A & 2B-ot
Robert Kloetzke, C. Falls, 3C*
Jerry Lacy, Thompson Falls, 2B*
William Moritz, Shelby, 2A3B
Todd Miller, Malmstrom, 2B, 2C-ot*
Rick Mitchell, Forsyth, 2C-ot
Donald Roberts, Deer Lodge, 2A3B-ot
Hugh Robertson, Helena, 2A-ot*
Ed Siemers, Helena, 2C
Cliff Singer, Crow Agency, 2A*
Terry Threlkeld, Bozeman, 2A3B

### Class 3:
James Boerner, Great Falls, 3A4B*
Jason Burk, Bozeman, 3A4B & 3C-ot
Danny Burgett, Great Falls, 3A4B-ot
Ron Black, Browning, 3C-ot*
Robert Dunseth,St.Marie,3A4B & 3C-ot
Justin Gamba, St. Regis, 3A4B-ot
Nancy Gilliland, Somers, 3A4B-ot*
Marjorie Guinn, Ennis, 3A4B-ot*
Tim Holmes, White Sulpur S.,3B
James Morgan, Ronan, 3C*
Mark Perry, Babb, 3C
Jon Rutt, Laurel, 3A-ot
Jerry Schindler, Missoula, 3B
Terry Threlkeld, Bozeman, 3C-ot
Doug Wells, Bozeman, 3A4B & 3C-ot
Michael Wildey, Lolo, 3B-ot

### Class 4:
Gerald Aisenbrey, Laurel, 4AB
Steven Arnold, Sidney, 4C
James Beech, Paradise, 4AB
Leo Bogden, Broadview, 4AB & 4C
Jay Claassen, Sidney, 4C
Patrick Dennis, Ashland, 4C*
Robert Dunlop, Helena, 4AB
Gary Emmert, Columbia Falls, 4AB
Wayne Gillespie, Missoula, 4AB
Dan Gregory, 4AB-Lewiston- 4AB-ot
Kenneth Hanic, Ashland, 4C*
Kenneth Holmes, Fairfield, 4AB-ot
James Laubach, Carter, 4AB
Phillip Lauman, Somers, 4AB
Michael Madsen, Froid, 4AB & 4C-ot
Michael McCoy, Kalispell, 4AB-ot
Harry Pitman, Coram, 4AB
Dick Reed, Columbia Falls, 4AB-ot
L.Robinson, Virginia City, 4AB & 4C-ot
Dan T. Spoon, Wisdom, 4C
Ron Stenerson, Sidney, 4C
Walter Tabb, Coram, 4AB
Joseph Wilson, Bozeman, 4AB

### Class 5:
Jo Lynn Anderson, Miles City
Charles Ashley, Kalispell
Ron Bartholomew, Sidney
Ruth Bartholomew, Sidney
James Boetticher, Jackson
Robert Dobrovolny, Babb
Nancy Gilliland, Somers
Karla Houtz, Kalispell
George Hofer, Lewistown
Josh Hofer, Loring
Kurt Hofer, Loring
Michael Kelly, Missoula
Dan Ledford, Missoula
Maurice Post, Libby
David Rodems, Jefferson City
Juanita Shepard, Missoula
David Schmeeckle, Kalispell
Ken Stahl, Roundup
David Swanson, Kalispell
Richard Wilcox, Miles City

*Denotes those previously certified in another classification type

# *NEWS. . . . ABOUT CERTIFICATION*

*By: Rosemary Fossum, Water Quality Bureau Certification Officer*

The **fourth training biennium** began July 1, 1992, and will end two years later on June 30, 1994. The department has approved 190 CEC courses for the last two-year period. These numbers are exclusive of correspondence courses approved for CEC credit, currently some 48. The CEC's required for this current training period are double what they were during the last two-year period for Class 1-4 operators. Beginning July 1, 1992, Class 5 operators will require .4 CEC's (four hours) every two years. Of those who applied for renewal of certification, fewer than 20 operators failed to meet their CEC requirements this year. That's an exemplary record for 1400 operators. Hats off to all of you--operators, training providers, trainers, WQB staff. It was a team effort we can point to with pride.

**THE WATER AND WASTEWATER OPERATOR CERTIFICATION ADVISORY COUNCIL** welcomes Leland Leivo, Bigfork's Water and Sewer District Manager, to a term on the council ending October 16, 1994. Mr. Leivo will complete the term of Mark Richardson, who died last November. Leland has been a certified operator since 1983, and currently is certified as a Class 2/3 well water system operator and Class 2 wastewater operator. Leland believes the quality of the certified operator has improved immeasureably over the last ten years. That strenghthened our conviction that we are making a difference, albeit there's still PLENTY of room for professional development.

**RENEWAL TIME** always precipitates some interesting personal comments and letters to the certification office. One was from Art Baird who said he had finished 15 years as water commissioner for Broadview's Water Department. The job is going to a younger person, he says. At age 77, Art wants to be footloose when he feels like it. We honor Art Baird and others like him who have taken long-term responsibility for their small town's water and wastewater systems. In many cases operators like Art have done the job with little or no remuneration let alone praise or thanks. The 1990's may be different as a decade that truly recognizes the importance of a knowledgeable person operating community water and wastewater systems. Certified operators protect the largest investment most communities will ever make. As always, the foremost reason for certified operators is the protection of public health and state waters.

**WATER SCHOOL DATES HAVE BEEN CHANGED AGAIN. Did you notice? Water School dates are now October 5-8 at MSU's Strand Student Union. The new date for the certification exams will be October 9. Change your calendar right now, while you're thinking about it. By law all applicants must apply before September 25. To adequately prepare, all applicants should apply at least a month before that time. Examinees attending Water School should not expect trainers to teach them everything they need to know in four days. C'mon, "get real!"**

**TWO MONTANA CERTIFIED OPERATORS** now live in Hawaii but want to maintain their Montana certification. They are Will Garvin and Stephen Wrye. Both say that Hawaii's certification program is just getting started and that certified operators are in great demand. However, according to Stephen Wrye the pay is extremely low considering the high cost of living.

**METC'S 1993 TRAINING CALENDAR** is in the planning stages and may be out in December this year. Keep your address current with us so that you'll be sure to get one!

# EXAMINATION NOTICE

**ON FRIDAY-----------OCTOBER 9, 1992-----------8:30 A.M. TO 12:30 P.M.**

**Examinations for certification as a Water Distribution Systems Operator, Water Plant Operator, and Wastewater Plant Operator will be administered in BALLROOM C of the STRAND STUDENT UNION, MSU, BOZEMAN.**

The examinations will be given at the conclusion of the annual Water School jointly sponsored by the Water Quality Bureau and Montana State University and held on the MSU campus October 5-8. Attendance at the school is not required in order to take a certification examination. However, anyone planning to take an examination must complete a certification application AND examination registration slip before September 25, 1992, and send it to:

**Water/Wastewater Operator Certification**
**Water Quality Bureau - Room A-206 - Cogswell Building**
**Helena, MT 59620 (Phone: 444-2691)**

To verify that you plan to take the examination on October 9, 1992, complete the examination registration slip below and remit $5 per examination. Make checks payable to DHES, OPERATOR CERTIFICATION. Fees which must accompany applications for certification are $30 per any water distribution and/or water treatment type and classification; and $30 per any wastewater type and classification. Examination fees should be added to application fees and are $5 per examination.

No pre-registration is required for Water School. Fees for the school are payable to MSU at the time of registration on October 5.

**PLEASE RETAIN THE UPPER PORTION OF THIS NOTICE.**

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EXAMINATION REGISTRATION SLIP
(Detach and return with $5 per exam by September 25, 1992)

On October 5, 1992, I will take the examination(s) I have checked:

| Type | Class | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Water Distribution | (A) | ___ | ___ | ___ | ___ | ___ |
| Water Plant or Well | (B) | ___ | ___ | ___ | ___ | ___ |
| Wastewater Plant | (C) | ___ | ___ | ___ | ___ | |

*Note: Combination examinations are offered for 2A3B, 3A4B, 4AB and 5AB and require $5 examination fee only.

NAME: ______________________________
ADDRESS: ______________________________
SYSTEM: ______________________________

# 9 THINGS YOU CAN DO TO SAVE WATER IN THE BATHROOM

1 **Check your toilets for leaks.** Put a little food coloring in your toilet tank. If, without flushing, the color begins to appear in the bowl, you have a leak that should be repaired immediately.

2 **Stop using the the toilet as an ashtray or wastebasket.** Every time you flush a cigarette butt, facial tissue, or other small bit of trash, you waste five to seven gallons of water.

3 **Put plastic bottles in your toilet tank.** To cut down on water waste, put an inch or two of sand or pebbles inside each of two plastic bottles to weigh them down. Fill them with water and put them in your toilet tank, safely away from operating mechanisms. In an average home, the bottles may displace and save ten or more gallons of water a day.

4 **Take shorter showers.** Long, hot showers can waste five to ten gallons every unneeded minute. Limit your showers to the time it takes to soap up, wash down, and rinse off.

5 **Install water-saving shower heads or flow restrictors.** Your local hardware or plumbing supply store stocks inexpensive water-saving shower heads or restrictors that are easy to install.

6 **Take baths.** A bath in a partially filled tub uses less water than all but the shortest showers.

7 **Turn off the water after you wet your toothbrush.** There is no need to keep water pouring down the drain. Just wet your brush and fill a glass for mouth rinsing.

8 **Rinse your razor in the sink.** Fill the bottom of the sink with a few inches of warm water. This will rinse your blade just as well as running water. And far less wastefully.

9 **Check faucets and pipes for leaks.** Even the smallest drip from a worn washer can waste 20 or more gallons a day. Larger leaks can waste hundreds.

# 6 THINGS YOU CAN DO TO SAVE WATER IN THE KITCHEN AND LAUNDRY

1 **Use your automatic dishwasher only for full loads.**

2 **Use your automatic washing machine only for full loads.**

3 **If you wash dishes by hand, don't leave the water running for rinsing.** If you have two sinks, fill one with soapy water and one with rinse water. If you have only one sink, gather washed dishes in a dish rack and rinse them with a spray device or a panful of hot water.

4 **Don't let the faucet run while you clean vegetables.** Just rinse them in a stoppered sink or a pan of clean water.

5 **Keep a bottle of drinking water in the refrigerator.** Running tap water to cool it off for drinking water is wasteful.

6 **Check faucets and pipes for leaks.** Leaks waste water 24 hours a day, seven days a week and often can be repaired with only an inexpensive washer.

# 10 THINGS YOU CAN DO TO SAVE WATER OUTSIDE

1. **Water your lawn only when it needs it.** A good way to see if your lawn needs watering is to step on the grass. If it springs back up when you move, it doesn't need water. If it stays flat, fetch the sprinkler.

2. **Deep-soak your lawn.** When you do water, do it long enough for the moisture to soak down to the roots where it will do the most good. A light sprinkling can evaporate quickly and tends to encourage shallow root systems.

3. **Water during the cool parts of the day.** Early morning generally is better than dusk since it helps prevent growth of fungus.

4. **Don't water the gutter.** Position your sprinklers so water lands on the lawn or garden, not on paved areas. Also avoid watering on windy days.

5. **Plant drought-resistant trees and plants.** Many beautiful trees and plants thrive with far less watering than other species.

6. **Put a layer of mulch around trees and plants.** Mulch will slow evaporation of moisture and discourage weed growth, too.

7. **Use a broom, not a hose, to clean driveways and sidewalks.**

8. **Don't run the hose while washing your car.** Clean the car with a pail of soapy water. Use the hose just to rinse it off.

9. **Tell your children not to play with the hose and sprinklers.**

10. **Check for leaks in pipes, hoses, faucets, and couplings.** Leaks outside the house may not seem as bad since they're not as visible. But they can be just as wasteful as leaks inside. Check frequently and keep them drip-free.

Fresh clean drinking water is yours to use whenever you need it. But not to waste. It's too valuable. Remember that a little effort and a little common sense will make a big difference.

Following the tips in this folder can save thousands of gallons every year in every household. That's right, thousands! So be alert. If you see water being wasted in your own home, tighten up. If you see it being wasted anywhere else, speak up.

# USE WATER… AND USE IT WISELY

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# THINGS YOU CAN DO TO PREVENT WATER WASTE

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Environmental Sciences
Room A-206, Cogswell Building
Helena, Montana 59620

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